

MAGNETRON WITH WAVY STRAPS

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-- This Application is a national phase application under 35 U.S.C. 371 claiming the benefit of PCT/GB03/02342 filed on 05/29/2003, which has priority based on United Kingdom Application No. 0212630.8 filed on 05/31/2002. --
FIELD OF THE INVENTION

5 The present invention relates to magnetrons.

BACKGROUND OF THE INVENTION

10 Magnetrons are well-known vacuum electron discharge devices used to generate electromagnetic filed in the microwave frequency range. A typical magnetron comprises a cylindrical cathode, a cylindrical anode surrounding the cathode and a plurality of resonant cavities formed in the anode by either slots or vanes. An electric field is
15 established between the cathode and the anode, and a magnetic field is applied perpendicular to the electric field in the so-called interaction region, which is the evacuated space between the cathode and the resonant cavities in the anode. When the value of E/H is suitable,
20 electrons emitted from the cathode interact with the electric and magnetic fields to generate microwave energy at a frequency determined by the parameters and the resonance characteristics of the cavities.

25 A known problem with magnetrons is that of unwanted emissions. These generally take two forms: the first is amplification of a harmonic of the desired mode. The other form of unwanted emission is called moding; that is, significant cavity responses occurring at frequencies
30 other than the frequency for which the magnetron is designed to operate.

Conventionally, harmonic emissions are reduced by means of external microwave filters or by employing
35 complex output systems embodying integral filters.